



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,007	07/30/2001	Kazunobu Kubota	7217/65184	1045

7590

06/30/2005

COOPER & DUNHAM LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER

FAULK, DEVONA E

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,007

Applicant(s)

KUBOTA, KAZUNOBU

Examiner

Devona E. Faulk

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,8,9,12-14,20,21,24-26,32,33 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,8,9,12-14,20,21,24-26,32,33 and 36-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. In response to the restriction, the applicant has elected Species I. 2,14,26. The non-elected species (Species : II. 3,15,27; III. 4,16,28; IV. 5,17,29; V. 6,18,30; VI. 7,19,31 ; VII. 10,22,34 ; VIII. 11,23,35) are withdrawn from further consideration.

Drawings

2. **Figure 4** should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 2,8,9** recite the limitation "said time unit" in lines 4-5, 3 and 3 respectively. There is insufficient antecedent basis for this limitation in the claim. Claims 2,8,9 depend on claim 1 which recites " unit of time".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1,8,13,20,25,32,37-39** are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's admitted prior art.

Claims 1, 13 and 25 share common elements.

Regarding **claims 1,13 and 25**, Inanaga discloses an audio signal processing method ((abstract) that performs virtual acoustic image localization processing of audio signals based on at least one type of information among position information, movement information, and localization information (pages 1-3, Description of Related Art; Figure 4), the method comprising the steps of:

when there are a plurality of changes in said information within a prescribed unit of time, generating a single information change based on said plurality of information changes (1, Figure 4; page 3, Description of Related Art; The applicant's admitted prior art teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization. Each time denotes a given time unit. For a

Art Unit: 2644

given time unit one change in position or movement generates a single information.);
and

performing virtual acoustic image localization processing for said audio signals based on said generated information change (pages 1-3, Description of Related Art).

Regarding **claims 8, 20 and 32**, it is inherent to digital processing that the time unit is an integral multiple of the sampling period of said audio signals.

7. **Claims 37,38 and 39** share common elements.

Regarding **claims 37,38 and 39** Inanaga discloses an audio signal processing apparatus (Figure 1), comprising:

an audio signal processing unit for performing virtual acoustic image localization processing of audio signals based on at least one information type among position information, movement information, and localization information (2, Figure 4); and

information change generation means for generating, when a plurality of changes are made to said information within a prescribed time unit, one information change based on said plurality of information changes (1, Figure 4; page 3, Description of Related Art; The applicant's admitted prior art teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization. Each time denotes a given time unit. For a given time unit one change in position or movement generates a single information.), wherein

Art Unit: 2644

said audio processing unit is controlled based on the information change generated by said information change generation means, to perform virtual acoustic image localization processing of said audio signals (pages 1-2, Description of Related Art) .

Regarding **claim 39**, Inanaga further discloses a storage means (3, Figure 4) in which are stored a plurality of synthesized audio signals obtained from the localized processing.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 2,14,26** rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (Pages 1-4, Description of Related Art; Figure 4).

Claims 2,14 and 26 claims the audio signal processing method according to claims 1,13 and 26 respectively wherein the step of generating a single information change is performed using only a last one of said information elements presented within said time unit. The applicant's admitted prior art teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization (page 3,

Art Unit: 2644

Description of Related Art) but fails to specifically teach that single information change is performed using only said information presented last within said time unit. However, each time denotes a given time unit. For a given time unit one change in position or movement generates a single information. Last is defined as most recent. This one change reads on last information change. It would have been obvious to generate a single information change using only the information presented last within said time unit to reproduce virtual image localization information using the most recent data.

10. **Claims 12,24, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (Pages 1-4, Description of Related Art; Figure 4) in view of Inanaga et al. (US 5,796,843).

Claims 12,24 and 36 claim the audio signal processing method of claims 1,13 and 25 respectively wherein the information for said audio signals can be modified according to user operations. The applicant's admitted prior art teaches of a game and that position, movement, fluctuation, other control information is received from external equipment (Figure 4) but fails to disclose that information for said audio signals can be modified according to user operations. Inanaga discloses a video signal and audio signal reproducing apparatus that corrects an audio signal with respect to a relative movement of user and a head movement of the listener with respect to a virtual sound source from a video reproducing means (column 4, lines 15-20). It would have been obvious to modify the applicant's admitted prior art so that information for the audio signals can be modified according to user operations as taught by Inanaga in order to reproduce virtual localization information in real time.

Art Unit: 2644

11. **Claims 9,21,33** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (Pages 1-4, Description of Related Art; Figure 4) in view of Harigaya et al. (US 5,583,791).

Claims 9,21 and 33 claim the audio signal processing method of claims 1,13, and 25 respectively wherein said time unit is of variable length. Inanaga discloses audio processing and there is obviously a time unit but fails to disclose that the time unit is of variable length. Harigaya discloses an audio/video recording-reproducing apparatus using variable length coding (column 11, lines 12-16). It would have been obvious to vary the period using variable length coding as taught by Harigaya in order to process more data per period.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2644

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DEF



VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600